

CLAIMS

1. A wheel and floating rotor disc brake assembly including a wheel having a hub with at least one projecting portion, the projecting portion having a slot formed at least a part way around thereof, said slot lying in a plane substantially normal to
5 the axis of rotation of the wheel and parallel to the plane of rotation of the wheel, said disc brake rotor having at least one radially inward protruding tab adapted to locate in the hub slot, and fastening means for providing floating attachment of the wheel and rotor disc.
2. The wheel and floating disc brake assembly of claim 1, wherein the
10 projecting portion of the wheel hub projects from the centre of the hub.
3. The wheel and floating disc brake assembly of claim 2, wherein the centrally projecting portion has at least two holes passing through it, each hole positioned equi distant the axis of rotation, and respective holes, and having axes substantially parallel to the axis of rotation of the hub.
- 15 4. The wheel and floating disc brake assembly of claim 3, wherein the holes are of a constant diameter to a depth, at which point the diameter is reduced so as to create a shoulder.
5. The wheel and floating disc brake assembly as in either of claims 3 or 4, wherein the centrally projecting portion is locally recessed intermediate respective
20 holes so as to form a series of radially projecting lobes.
6. The wheel and floating disc brake assembly of claim 5, wherein the slot passes through the outer edge of each lobe, said slot lying in a plane substantially parallel to the plane of rotation of the wheel.

7. The wheel and floating disc brake assembly of claim 2, wherein there is a disc brake rotor with a concentrically positioned centre-hole passing there through, said centre-hole being sized so as to substantially accept the centrally projecting portion of the wheel hub.

5 8. The wheel and floating disc brake assembly as in any one of the preceding claims, wherein there is a plurality of tabs protruding radially inwards from the inner edge of the centre-hole in the disc rotor, the number and position of tabs corresponding with the number and position of lobes on the wheel hub.

10 9. The wheel and floating disc brake assembly of claim 8, wherein there is at least a portion of a hole passing through each tab, said through holes being arranged so as to align with the holes in the wheel hub when assembled, in readiness to accept floating attachment means.

15 10. The wheel and floating disc brake assembly of claim 9, wherein the localised recesses in the wheel hub are adapted to provide clearance between the lobes for the radially protruding tabs of the disc brake rotor.

11. The wheel and floating disc assembly of claim 10, wherein the depth of radial slot in each lobe is such that it provides a slight clearance over the thickness of the disc brake rotor.

20 12. The wheel and floating disc assembly of any of claims 9 to 11, wherein the floating attachment means include axial pins inserted into the axially aligned bores created by the wheel hub and disc brake rotor until the end of the pin abuts the shoulder in the through hole of the hub, thereby limiting relative rotational movement between them.

13. The wheel and floating disc assembly of claim 12, wherein there is a means to limit relative axial movement or float positioned between the disc rotor and wheel hub.
14. The wheel and floating disc assembly of claim 13, wherein the means to
5 limit relative axial movement or float has a hole passing through it, the hole being sized and adapted to accept an axial pin.
15. The wheel and floating disc assembly of claim 14, wherein the means for limiting axial movement or float between the disc rotor and wheel hub is an axial spring clip.
- 10 16. The wheel and floating disc assembly of claim 14, wherein the means for limiting axial movement or float between the disc rotor and wheel hub is a thrust washer.
- 15 17. A method of assembling a wheel hub and disc brake, wherein the centrally projecting portion of the wheel hub passes through the centre-hole of the disc brake rotor, such that the inwardly protruding tabs of the disc rotor align with the recessed portions between the lobes of the hub centre until the tabs lie in the same plane as the slots located in the hub lobes, the disc rotor is then rotated relative to the hub until the inwardly protruding tabs of the brake rotor engage the slots in the wheel hub lobes such that the holes in the tabs and the holes in the brake rotor are
20 axially aligned in readiness to accept floating attachment means.
18. The method of claim 17 wherein means for limiting axial movement or float is positioned between the wheel hub and disc brake, such that holes in the means for limiting axial movement or float align with the holes in the wheel hub and disc brake.

19. The method of claim 18, wherein the floating attachment means include axial pins inserted into the axially aligned bores created by the wheel hub, means for limiting axial movement or float and the disc brake rotor, thereby limiting relative rotational movement between them.

5 20. The wheel and floating rotor disc brake assembly of claim 1, wherein there are at least two projecting portions arranged concentrically around the axis of rotation of the wheel such that they are equi distant the axis of rotation, and each other.

10 21. The wheel and floating rotor disc brake assembly of claim 20, wherein the projecting portions are nodes.

22. The wheel and floating rotor disc brake assembly of claim 21, wherein each node has at least one hole penetrating therein, each hole having an axis substantially parallel to the axis of rotation of the hub.

15 23. The wheel and floating rotor disc brake assembly of claim 22, wherein there is a radial slot passing through at least a portion of the outer edge of each node, said slot lying in a plane substantially parallel to the plane of rotation of the wheel.

20 24. A method of assembling a wheel hub and disc brake, wherein the nodes of the wheel hub are passed through the recessed portion in the disc brake rotor, such that the inwardly protruding tabs of the disc are positioned between the nodes of the hub until the tabs lie in the same plane as the slots located in the hub nodes. The disc rotor is then rotated relative to the hub until the inwardly protruding tabs of the brake rotor engage the slots in the wheel hub nodes such that the holes in the nodes and the holes in the brake rotor are axially aligned.

25. The method of claim 24 wherein means for limiting axial movement or float is positioned between the wheel hub and disc brake, such that holes in the means for limiting axial movement or float align with the holes in the wheel hub and disc brake.
- 5 26. The method of claim 25, wherein the floating attachment means include axial pins inserted into the axially aligned bores created by the wheel hub, means for limiting axial movement or float and disc brake rotor, thereby limiting relative rotational movement between them.
- 10 27. The wheel and floating rotor disc brake assembly as in any one of the preceding claims, wherein the through holes in the inward protruding tabs of the disc brake rotor are countersunk, so that thrust washers can be seated in the countersunk holes.
28. The wheel and floating rotor disc brake assembly of claim 27, wherein the thrust washers are circular waveform spring washers.
- 15 29. The wheel and floating rotor disc brake assembly of claim 28, wherein the washers are seated in the countersunk holes such that the convex face of the washer is uppermost, and the apex of the washer is substantially radially aligned with the centre of the disc brake rotor prior to assembly, so as to facilitate smooth engagement of the washer with the outer edge of the wheel lobe during assembly.
- 20 30. A wheel and floating rotor disc brake assembly substantially as described in the specification with reference to and as illustrated by the accompanying representations.

31. A method of assembling a wheel hub and disc brake assembly substantially as described in the specification with reference to and as illustrated by the accompanying representations.